DIPHTHERITIC INFLAMMATION

OF

PROCIDENT UTERUS AND VAGINA.

BY

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CLINICAL LECTURER ON THE DISEASES OF WOMEN IN THE ROYAL INFIRMARY.

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Mrs A., the subject of the following observations, has a long medical history connected with her sufferings from prolapsus of the uterus. At present all this is passed over, in order that attention may be confined to the consideration of the diphtheritic disease.

In commencing, I must guard against misapprehension, by saying that I do not here speak of diphtheria, but only of pellicular or diphtheritic inflammation, apart from any real or imaginary constitutional affection.

The appearance of the diphtheritic membrane on the very day of its production was only once noted. On the other occasions of its production, it was not closely examined till after it was probably more than a day old, being then discovered unexpectedly in the course of observing the results of surgical interference for the cure of the prolapsus. But in the end of March, the appearance of an extensive diphtheritic patch, covering the prolapsed cervix uteri, and a large portion of the surrounding vaginal surface chiefly anterior to the cervix, was under daily observation. The woman had been able to be out of bed and go about the ward. At the visit on the 29th she was found in bed, and was evidently suffering considerably, and had feverish symptoms. She said that since the previous day she had had severe burning or scalding pain in the procident parts, which had become so tender as to prevent her walking or even sitting up. This special burning pain soon passed away.

On exposing the prolapsus, it was found that an entirely new diphtheritic patch had just appeared. It was situated upon the posterior and lateral vaginal walls, and nearly surrounded the older patch of the same disease, with which it was also continuous. The

new deposit was of the extent of some inches in length, and above half an inch in breadth. Seen through the thinnest parts of the new membrane, the mucous tissue beneath was at this time evidently red and swollen. The new membrane was elevated above the level of the surrounding healthy mucous membrane. It was not of uniform thickness, being at some parts so thin as to be translucent, at others elevated as if in blisters, and quite opaque. These blister-like parts had a thickness at most of about a line. The colour was opaline white. At various points this tough new deposit was peeled off with the nail. The mucous membrane beneath had the appearance of entireness and health, except that it had a slightly redder tint than the neighbouring unaffected parts. At one point only, a small irregularly shaped, superficial rawness or erosion, little more than a square line in extent, was seen on the peeled surfaces. No blood flowed when the membrane was detached. There appeared to be almost no discharge from the affected parts. The membrane was microscopically examined by Dr Haldane. Its surface was covered by tessellated epithelial scales, in only some of which could a nucleus be recognised. The mass had a glistening or waxy appearance, and on the addition of iodine presented the characteristic reaction of waxy structure, becoming of a well-marked brown colour. When teased out, the mass presented at the edges a finely granular appearance, with a tendency to fibrillation. At some places it seemed to consist of compressed and altered cells.

Examined on the following day, all the peculiar appearances, to the naked eye, of the new diphtheritie deposit were gone. The parts peeled on the previous day were undistinguishable, the lost membrane being restored. The new extension of the disease could for some days be distinguished from the older parts, but the difference between the two was very slight. The membrane was now of a dirty yellowish white colour. Instead of being raised above the general surfaee of the mucous membrane, it was depressed below it, and the elevated edge of mucous membrane surrounding the exudation was red. This redness was merely a line, being found not to extend beneath the opaque yellowish exudation.

Having thus taken a part of the history of this case from its proper place, in order to illustrate the origin of the diphtheritic deposit, I shall now give a brief account of the ease as the events, connected with the disease under consideration, occurred.

Excision of the hypertrophied posterior lip of the cervix was performed on the 11th of November, and was followed by eomplete disappearance of the hypertrophy of the posterior half of the uterus. No such fortunate change took plaee in the elongated, but, at this time, otherwise slightly hypertrophied anterior wall. This anterior wall was three inches longer than the posterior, and continued to be procident. A large abscess was gradually formed in the region of the left ovary, and was opened on the 9th day of December. During the gradual evacuation of this abscess, ocular examination

of the parts was not made. On the 6th of January, after all purulent discharge had ceased for about ten days, the parts were again carefully examined. The atrophy of the posterior wall of the cervix uteri continued as before. There only remained some thickening and hardness in the seat of the abscess.

At this time, the procident anterior lip of the cervix and a considerable extent of the adjacent mucous membrane of the vagina, was covered with a dense layer of whitish diphtheritic membrane. It could with some difficulty be peeled off with the nail, and the mucous membrane beneath in an apparently healthy state be exposed. An indistinct marbling with red could be seen on the mucous surface, and blood readily oozed from it if it was not gently handled. Under the microscope the membrane presented an ill-defined fibrillar structure, with numerous young or small cells. Although it was first carefully examined on this day, it had probably existed for some time, certainly not above two or three days. There were no constitutional symptoms, nor did the local disease cause any special complaint.

After the patch had existed for about ten days, acute feverish symptoms began, and a purulent vaginal discharge appeared at the same time. The purulent discharge soon became very copious, and was observed to come from the whole surface of the vagina and cervix uteri. The whole diphtheritic membrane was now rapidly broken up and detached in the course of little more than a day. The mucous membrane laid bare by this separation was almost quite healthy, and resembled in every respect the neighbouring superficially inflamed portions. When this simple gonorrhœa began there was much complaint of pain in the affected parts and in the groins. The discharge after lasting for three days diminished greatly in quantity, and the alarming feverish symptoms abated greatly, as well as the local pains. But this amelioration was immediately followed by the supervention of pain in the back and in the pelvis, and it was found that a recto-vaginal abscess was forming. On the twenty-seventh day of January, this abscess, of the size of a large hen's egg, was freely evacuated of its fetid purulent contents. Thereafter the woman slowly recovered strength.

On the eighth day of February, examination revealed a healthy condition of the mucous surfaces, with the exception of a patch of thin greyish exudation on the elongated anterior lip of the cervix uteri, and an irregular superficial erosion or raw surface of about an inch in length and half as broad, running from above, downwards, across the projecting lip.

On the the nineteenth day of February, this woman made complaint of pain in the back, and had a thin clear discharge found to proceed from the uterine cervical glands. An ocular examination showed that the diphtheritic exudation had reappeared, and had a dirty yellowish-brown colour. The superficial ulceration or erosion which had been seen very shortly before was covered by the membrane,

so that its site could not be made out. Portions of the membrane, artificially detached, were examined by Dr Haldane, and found under the microscope to consist of delicate fibrillæ and fibroplastic or young cells.

The exudation increased gradually in extent, but apparently little in consequence of its extending and attacking new parts; its increase was evidently chiefly if not entirely a result of the rapid hypertrophy undergone by the affected parts. These were painful and tender and constantly prolapsed. Both lips of the cervix gradually assumed great dimensions and the diphtheritic affection became chronic.

The membrane was repeatedly examined by Dr Haldane, and exhibited the usual characters of a more or less fibrillated stroma, with a varying proportion of fibro-plastic cells. It varied greatly at different parts and at different times, in the degree of its adhesion to the subjacent mucous surface, and in the degree of its toughness. Its ordinary thickness was a little above that of a wafer. Sometimes it became for a while dry and hard, but a serous moisture generally covered its surface and slightly wetted the woman's linen. Excepting this, no discharge came from it. The parts covering the uterine cervix occasionally became dark in colour from ecchymosis, and then in a few days gradually resumed their usual tint. No part of the membrane became detached spontaneously, and the spaces artificially denuded were always again covered before the visit next day.

Nitrate of silver in solution and in substance was applied to it. Strong hydrochloric acid was also applied to it. But only a temporary discoloration of the membrane was produced.

With the exception of the episode which forms an early paragraph of this paper, little change, except gradually increasing hypertrophy of the parts, took place for several weeks.

In the middle of April, it was deemed absolutely necessary to replace and retain the whole mass in the pelvis, with a view to further treatment of the prolapse. For many days before this was done, it was remarked that the membrane was becoming thinner than before, especially where it covered the cervix uteri. The mucous membrane below it was found to bleed more easily, and to be evidently greatly denuded of its usual epithelial covering. On the cervix, numerous red points, like large granulations, could at some places be seen shining through the patch. Its whole appearance impressed us with the belief that it might over the whole surface be soon supplanted by a superficial ulceration.

The procidentia was cured by an autoplastic operation on the perineum, and the woman left the hospital in good health.

I am not of opinion that the case which has been just related is rare or unique. On the contrary, I have little doubt that diphtheritic inflammation is the starting point of at least many of the

ulcerations of procident uteri. MM. Boys de Loury and Costilhes,[1] M. Robert,[2] and more recently Dr Tilt,[3] have described diphtheritic or pseudo-membranous ulcerations of the uterine cervix; but their observations are confined to cases of this disease attacking the part in its natural situation. I have myself seen the disease affecting both the cervix uteri and the vagina under the same circumstances. In most of these cases the extent of the disease and its gravity have been slight, and its duration has been short. But, in cases such as the one I have related, the history of the disease is different; and its production appears to be almost entirely dependent upon the exposed condition of parts that are always naturally protected from various injurious impressions by the shelter afforded them within the pelvis. It is going far out of my way to mention the croupous inflammations of the uterus after delivery, and a similar disease, less known but not very rare, attacking the decidua in the early months of pregnancy; and I allude to them merely because they are examples of a closely allied if not identical kind of inflammatory action affecting portions of the genital mucous tract in women.

It is customary for obstetric authors, copying from one another, as they necessarily do, to ascribe the common ulcerations of the cervix uteri and vagina in cases of procidentia, not to exposure generally, and the great changes it necessarily implies in the parts displaced, but to the rubbing of the insides of the thighs upon the vagina, and to the irritation of the surfaces by urine flowing over them. That these latter influences are without any injurious effect I cannot undertake to say, but so far are they from being so manifest causes of evil as to require only to be mentioned, not carefully demonstrated, that it would demand considerable ingenuity to show any connexion between the causes and the effect ascribed to them.

A very little attention to the general history, and especially to the position of the characteristic ulcerations of procident uterus, will convince any one that they are not intertriginous in their nature or origin. Consideration of the same circumstances will easily lead the observer to the conclusion that, if urinous irrigation is the cause, it acts in an obscure way. It is quite possible that this baneful irrigation may induce inflammation and ulceration, even in parts remote from the source of the fluid and from the site of its application; but it is at present impossible to admit that it has a direct influence in producing the affection, when it is remarked that the ulcerations are not confined to the parts most or perhaps exclusively exposed to the contact of the urine, that parts remote are those generally affected, that the posterior surface of the procident mass, a part protected from the urine, is often the seat of the disease, that it often occurs in patches scattered irregularly over the

[1] Gazette Médicale de Paris, 1845, p. 374.
[2] Des Affections, etc., du Col de l'Utérus: These. Paris, 1848.
[3] On Uterine and Ovarian Inflammation, 1862, p. 220.

surface of the exposed uterus and vagina, and, finally, that it is observed in cases where no urinous irrigation at all takes place.

It is important to remark that the increasing size of the procident mass, in the cases under discussion, is often not the consequence of increase in quantity of the prolapsed parts. Increase of quantity goes on to a limited extent, and soon comes to an end in most cases. The increase in size is often the result of hypertrophy of the fallen structures, an increase in whose bulk may be truly enormous. Observation has shown me that this increase of bulk is, to a great extent, the result of inflammation; and the inflammation is frequently diphtheritic in its character, as this paper is intended to prove. It has been often remarked that inflammation of mucous surfaces sometimes induces paralysis of the subjacent muscular tissue; and it has occurred to me that a paralyzed condition of the uterine and vaginal muscular fibres, has a considerable share in the production of the hypertrophy which I have so often noticed to accompany inflammatory affections of prolapsed parts. This paralyzed condition of the vaginal muscular fibres is a very important affection in many cases besides those of procidentia uteri.

Lastly, I may remark, that the microscopic observations in this case contribute special grounds for calling the inflammation peculiarly diphtheritic, and not croupous. Lelut's[1] statement, that membranes of the former nature are produced in or under the epithelial tissue, has been confirmed by Virchow,[2] who distinguishes diphtheritic membrane produced in the epithelial layer from croupous membrane spread out upon the epithelial surface. The examination of a patch newly formed upon a previously healthy portion of mucous membrane, as related at the commencement of this paper, revealed the presence of abundant epithelial scales upon it. At the same time it must be observed that the existence of an entire epithelial surface beneath the patch shows that the membrane was not formed beneath the entire thickness of the epithelial layer, for it is scarcely to be admitted that a new and healthy looking epithelial surface could have been formed in so few hours under the diphtheritic patch, to replace the old epithelial layer raised upon its surface.

In none of my other microscopic examinations of such diphtheritic membranes were any epithelial scales discovered, a circumstance which may be explained in some instances by the age of the membrane at the time of the examination, and in other instances by the fact of the already almost complete epithelial denudation of the mucous surfaces at the time at which the new membrane made its appearance upon them.

The observation, during last winter, of the case specially considered in this paper, and of several others of a like kind, has satisfied me :—

[1] Archives Générales de Médicine, 1827, p. 351, etc.
[2] Archiv für Path. Anat. und Physiol., 1847, p. 252.

1. That diphtheritic inflammation of the mucous surfaces of the female genital organs, when exposed in procidentia, is not uncommon.

Many writers[1] describe deep ulcerations, perforations of the bladder, and gangrenes, of which this kind of inflammation may be the starting point.

2. That the diphtheritic patches may maintain their position and characters for many weeks, and probably for much longer.

The new membrane adheres to the subjacent mucous surface with degrees of tenacity varying at different times. It is often almost impossible to separate it from the portions of uterine mucous membrane that are covered by it, while its attachment to the vaginal mucous membrane is less firm.

3. That diphtheritic patches in this situation are probably sometimes supposed to be ulcerations.

The deception of the observer is easily accounted for by the appearance of the patches, their elevated margins, and the red enclosing line.[2]

4. That the detachment of such diphtheritic patches takes place in various ways.—

a. A superficial gonorrhœal inflammation may throw off the membrane, and the subjacent mucous tissue be left healthy or superficially abraded.

b. I am inclined to explain appearances observed in several cases, by the gradual desiccation of the membrane and its detachment like an extensive scale or scab. The subjacent, and now exposed mucous membrane, is left entire and healthy, or ulcerated in parts.

c. Replacement of the affected parts, and their retention within the pelvis, produces a slow detachment which I have not carefully observed.

5. That the diphtheritic membrane may gradually become thinner and thinner, while at the same time the subjacent epithelial structure is destroyed. In short, the diphtheritic patch may degenerate into an ulcer. This change may affect an extensive patch, or only parts of it.

[1] Churchill on Diseases of Women, 1857, p. 367.

[2] This redness, it may be remarked, is mentioned by Bretonneau in observations of analogous membranes in other parts of the body.

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